

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

## APPLICATION FOR PERMIT TO DRILL OR DEEPEN

## 1a. TYPE OF WORK

DRILL ☒DEEPEN ☐

## b. TYPE OF WELL

OIL  
WELL ☒GAS  
WELL ☐

OTHER

SINGLE  
ZONE ☐MULTIPLE  
ZONE ☒

## 2. NAME OF OPERATOR

Legacy Energy Corporation (303) 405-8440

## 3. ADDRESS AND TELEPHONE NO.

P. O. Box 480272, Denver, Co. 80248-0272

## 4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)\*

At surface

320' FSL &amp; 1040' FEL

At proposed prod. zone

Same

## 14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE\*

33 air miles NNW of Monticello, Ut.

15. DISTANCE FROM PROPOSED\*  
LOCATION TO NEAREST  
PROPERTY OR LEASE LINE, FT.  
(Also to nearest drig. unit line, if any)

4,086'\*

## 16. NO. OF ACRES IN LEASE

1,240.84

17. NO. OF ACRES ASSIGNED  
TO THIS WELL

40

18. DISTANCE FROM PROPOSED LOCATION\*  
TO NEAREST WELL, DRILLING, COMPLETED,  
OR APPLIED FOR, ON THIS LEASE, FT.

12,294'\*

## 19. PROPOSED DEPTH

4,135'

## 20. ROTARY OR CABLE TOOLS

Rotary

## 21. ELEVATIONS (Show whether DF, RT, GR, etc.)

4,435' ungraded ground

## 22. APPROX. DATE WORK WILL START\*

Jan. 1, 1999

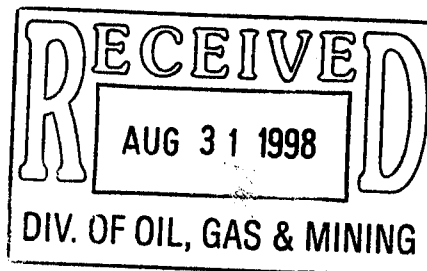
## 23.

## PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	GRADE SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
17-1/2"	13-3/8"	Conductor	120'	≈100 cu ft & to surface
12-1/4"	9-5/8" (N-80)	40#	1,000'	≈570 cu ft & to surface
7-7/8"	5-1/2" (J-55)	15.5#	4,135'	≈1,370 cu ft & to surface

\*Distances shown to unit boundary and unit well.

APD is also doubling as a BLM road right-of-way application for ≈900' x 20' (0.41 ac.) of existing road (see page 16) in S2SW4 25-28s-20e.



IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

## 24.

SIGNED

TITLE

Consultant (505) 466-8120

DATE

8-20-98

(This space for Federal or State office use)

PERMIT NO.

43-037-31792

APPROVAL DATE

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

CONDITIONS OF APPROVAL, IF ANY:

Federal Approval of this  
Action is Necessary

APPROVED BY

TITLE

BRADLEY G. HILL  
RECLAMATION SPECIALIST III

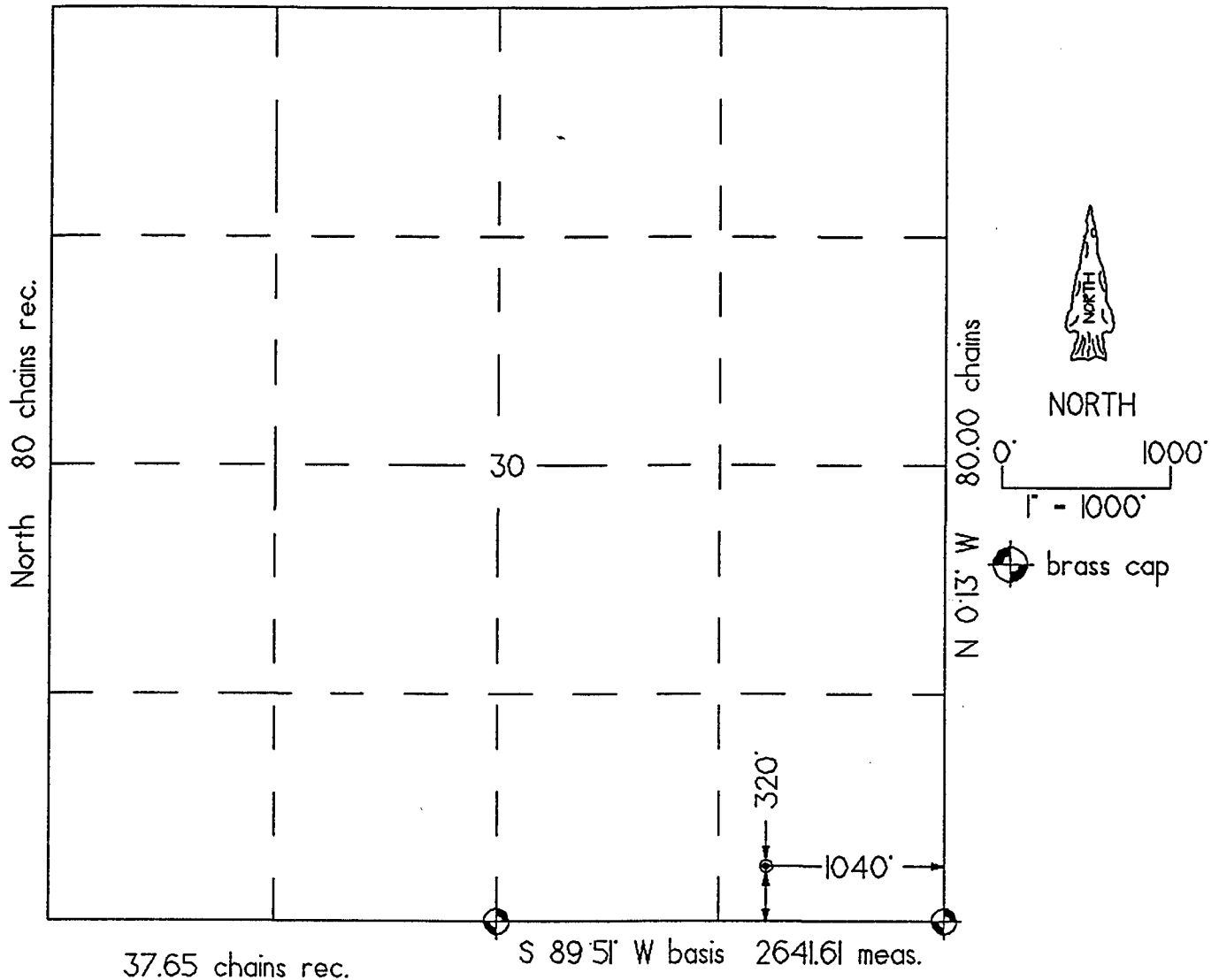
DATE

9/17/98

\*See Instructions On Reverse Side

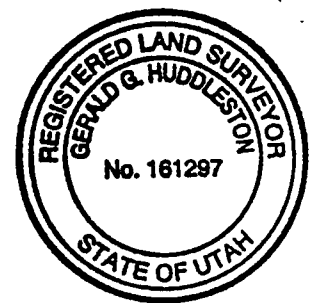
Well Location Plot

S 89°52' W 77.10 chains rec.



Well Location Description

LEGACY ENERGY CORPORATION  
Lockhart Federal # 2  
320' FSL & 1040' FEL  
Section 30, T.28 S., R.21 E., SLM  
San Juan County, UT  
4435' grd. el. (from GPS)



20 July 1998

Gerald G. Huddleston  
Gerald G. Huddleston, LS

The above is true and correct to my knowledge and belief.

HUDDLESTON LAND SURVEYING - BOX KK - CORTEZ, CO - (970) 565 -3330

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All lease operations will fully comply with applicable laws, regulations (43 CFR 3100), Onshore Oil & Gas Orders, and the approved plan of operations. The operator is fully responsible for the actions of his subcontractors. Legacy Energy Corporation will furnish a copy of these conditions to its field representative to assure compliance.

## Drilling Program

### 1. ESTIMATED FORMATION TOPS

<u>Formation Name</u>	<u>Depth from GL *</u>	<u>Depth from KB</u>	<u>Subsea Depth</u>
Moenkopi	0'	12'	+4,435'
Cutler Ss & Sh	100'	112'	+4,335'
Hermosa	493'	505'	+3,942'
Ismay	1,343'	1,355'	+3,092'
Desert Creek	1,577'	1,589'	+2,858'
Akah Shale	1,797'	1,809'	+2,638'
Cane Creek	3,083'	3,095'	+1,352'
Leadville Ls	3,435'	3,447'	+1,000'
Total Depth (TD)	4,135'	4,147'	+300'

\* based on ungraded ground level of 4,435'

### 2. NOTABLE ZONES

Oil and gas may be found in the Ismay, Desert Creek, Cane Creek, and Leadville. Fresh water is not expected. Brine may be found between the Akah and Cane Creek. Oil and gas shows which appear to be commercial to the well site geologist will be tested. Lost circulation could occur in the Cutler and Hermosa.

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All fresh water or usable (<10,000 ppm TDS) water and prospectively valuable minerals will be recorded by depth and protected by casing and cement. When possible, water flow rates will be measured, samples taken and analyzed, and the results forwarded to BLM.

### 3. PRESSURE CONTROL (Also see "5." on PAGE 4)

Installation, testing, and operation of the BOP system will follow Onshore Order 2. A drilling contract has not yet been awarded, thus the exact BOP to be used is not now known. Minimum BOP system rating will be 3000 psi. A diagram of a typical 3000 psi BOP (maximum expected pressure is  $\approx$ 2,500 psi) is on PAGE 3.

BOP will be 11" x 3,000 psi WP double gate with blind and 4-1/2" pipe rams. Rig will be equipped with upper and lower kelly cocks and a stabbing valve (with a wrench available at all times).

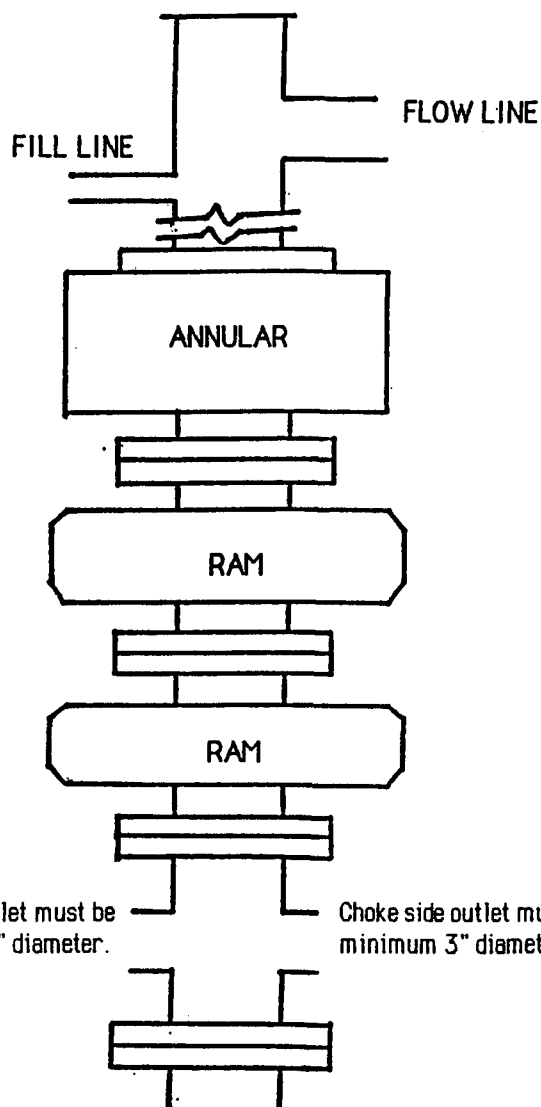
The flanged casing head will be an 8-5/8" x 11" x 3,000' psi WP with two 2" LP outlets. Outlets will be equipped with one 2" x 2,000 psi WP ball valve and one 2" x 3,000 psi WP bull plug. Tubing head is expected to be an 11" x 7-1/16" x 3,000 psi WP tubing head with two 2" LP outlets. Outlets will be equipped with two 2" x 2,000 psi WP gate valves. Tubing will be 2-7/8" 6.5# J-55 EUE.

BOP controls will be installed before drilling the surface casing plug and stay in use until the well is completed or abandoned. Call BLM at (435) 587-2141 at least three hours before pressure testing. Pressure tests will be conducted before drilling out from under all casing strings which are set and cemented in place. Pipe rams will be closed daily and blind rams on trips.

All BOP mechanical tests, pressure tests, and inspections will be recorded on the drillers log or daily drilling report.

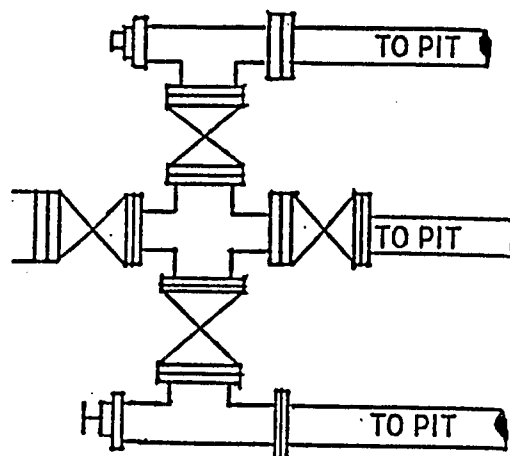
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TYPICAL BOP STACK  
 & CHOKE MANIFOLD

There will be at least 2 chokes and 2 choke line valves (3" minimum). The choke line will be 3" in diameter. There will be a pressure gauge on the choke manifold.



Kill line will be minimum 2" diameter and have 2 valves, one of which shall be a minimum 2" check valve.

Upper kelly cock will have handle available.  
 Safety valve and subs will fit all drill string connections in use.  
 All BOPE connections subjected to well pressure will be flanged, welded, or clamped.

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#### 4. CASING & CEMENTING

<u>Hole Size</u>	<u>O.D.</u>	<u>Weight</u>	<u>Grade</u>	<u>Type</u>	<u>Age</u>	<u>Setting Depth</u>
17-1/2"	13-3/8"	Conductor Pipe			New	120'
12-1/4"	9-5/8"	40#	N-80	LT&C	New	1,000'
7-7/8"	5-1/2"	15.5#	J-55	ST&C	New	4,135'

Conductor pipe will be cemented to surface with  $\approx$ 100 cu. ft. Redi-mix

Call BLM at (435) 587-2141 50' prior to reaching surface casing depth. Surface casing will be cemented to surface by pumping  $\approx$ 50 bbl fresh water, leading with  $\approx$ 250 sx (450 cu ft and 12.8 ppg) Light with 1/4 #/sk cellophane flakes + 2% CaCl<sub>2</sub>, and tailing with  $\approx$ 100 sx (120 cu ft and 15.6 ppg) Class G with 1/4 #/sk cellophane flakes+ 2% CaCl<sub>2</sub>. There will be  $\approx$ 100 sx neat cement and one inch tubing on site for use if a top job is needed. Equipment will include:

- 1) Guide shoe with an insert float located one joint above the shoe
- 2) Top and bottom rubber wiper plugs
- 3) Centralizer with a stop ring in the middle of the shoe joint
- 4) Centralizers over collars on first 3 connections.

Production casing will be cemented from TD to surface by pumping  $\approx$ 50 bbl Super flush followed by  $\approx$ 1,435 sx (1,370 cu. ft. @ 17.5 ppg) Class G + 0.75% friction reducer. Volume is based on 25% excess and yield of 0.95 cu. ft./sk. Actual volume and additives will be determined by caliper log, temperature, producing zone intervals, make up water, etc. Equipment will include:

- 1) Differential fill float collar set one joint above guide shoe
- 2) Top and bottom rubber wiper plugs
- 3) Centralizer with stop ring in middle of shoe joint.
- 4) Centralizers over collars on first 5 connections, excluding float collar.  
Centralize through and 100' on either side of potentially productive zones.
- 5) Thread lock all connections through float collar. Use API casing dope on all other connections.

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## 5. MUD PROGRAM

<u>Depth</u>	<u>Type</u>
0' - 500'	Fresh water with gel/lime weighted to 8.4-8.8 ppg.
500' - 2,500'	Air mist drilled
2,500' - TD	Salt saturated, weight with barite to $\approx$ 13.5 ppg. Raise weight if needed. Maximum mud weight 16 ppg.

Lost circulation materials (e.g., cedar bark, paper shreds) will be on site. Any air drilling will comply with Onshore Order 2. Rig will be equipped with spark arrester, blooie line, float valve, automatic igniter when air drilling. No chrome compounds will be on location.

## 6. CORING, TESTING, & LOGGING

No cores are planned. DSTs may be run if significant shows are found. DST times will be IF (15 min.), ISI (45 min.), FF (60-90 min.), and FSI (2 x FF). Test string will include dual packers, top and bottom pressure recorders, jars, safety joint, sample chamber, and reverse circulating sub (pressure and bar activated). Fluid entry will be monitored with an echo meter.

DIL-SFL-SP-GR and BHC-Sonic-GR-CAL may be run from the base of the surface casing to TD. A LDT-CNL-GR-CAL may be run across the bottom 3000'. One man mud logging unit with gas detector and gas chromatograph will be on site from  $\approx$ 1,200' to TD. Cuttings will be collected every 30' from surface to  $\approx$ 1,200' and every 10' from  $\approx$ 1,200' to TD.

Whether it is completed as a dry hole or producer, "Well Completion or Recompletion Report and Log" (Form 3160-4) will be submitted within 30 days after completion of the well or after completion of operations *per* 43 CFR 3162.4-1. Two copies of all logs, core descriptions & analyses, test data, geologic summaries, sample descriptions, and all other data obtained

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during drilling, work over, and/or completion operations, will be filed with Form 3160-4. (If requested, sample cuttings, fluids, and/or gases will be submitted to BLM.)

#### 7. DOWN HOLE CONDITIONS

Maximum anticipated bottom hole pressure is  $\approx$ 2,500 psi. No abnormal pressures or temperatures are expected. Hydrogen sulfide may be found in the Leadville and a contingency plan is attached.

#### 8. MISCELLANEOUS

The anticipated spud date is January 5, 1999. It is expected it will take  $\approx$ 2 weeks to drill and  $\approx$ 2 weeks to complete the well.

The spud date will be phoned to the Resource Area, a minimum of 24 hours before spudding. A Sundry Notice (Form 3160-5), reporting the spud date and time, will be sent to the District Manager within 24 hours after spudding. If the spud is on a weekend or holiday, the Sundry will be sent on the following regular work day. Daily drilling reports will be sent to the District Office at least weekly.

Operations authorized by this APD will not be suspended for more than 30 days without prior approval of BLM. All conditions of approval will apply to any operations with a replacement rig.

There will be no change from the proposed drilling and/or work over plan without prior approval from the District Office. A Sundry Notice will be filed for approval for all changes of plans and other operations *per* 43 CFR 3162.3-2.



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Starting with the month when operations begin, and continuing each month until the well is P&Aed, a "Monthly Report of Operations" (Form 3160-6) will be sent to the Minerals Management Service.

Immediate Report: Spills, blowouts, fires, leaks, accidents, or any other unusual events will be promptly reported to BLM *per* NTL-3A.

If the well is successfully completed for production, then the District Manager will be notified. The Resource Area will be notified prior to the first sale. Written notification will be sent not later than 5 business days following the date on which the well is placed on production. The Resource Area may schedule a first production conference after receipt of the first production notice.

Approval to vent/flare gas during initial well evaluation will be obtained from the District Manager. Preliminary approval will not exceed 30 days or 50 MMcf of gas. Approval to vent/flare beyond this initial period will require the District Manager's approval *per* NTL-4A.

A Sundry Notice will be sent to the District Manager within 30 days following completion of the well for abandonment. The Sundry will note where plugs were placed and the current status of surface restoration. Final abandonment will not be approved until reclamation required by the approved APD or abandonment notice has been completed to the satisfaction of BLM.

The well will be identified starting with rig-up. This information "Legacy Energy Corporation, Lockhart Federal #2, SESE 30-28s-21e, San Juan County, Ut., UTU-65347" will be posted on an all weather sign at the pad. Once plugged, the same information will be beaded on the top of the casing with a welding torch. The above ground dry hole marker will be omitted.

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## Surface Use Plan

### 1. EXISTING ROADS & DIRECTIONS (See PAGES 15 & 16)

From Monticello, go N 15 miles on US 191 to the junction with U-211.  
Then turn left and go W 29.2 miles on U-211.  
Then turn right and go N 15.5 miles on County Road 122.  
Then turn right at a signless pair of posts and go NE 0.2 mi. on a dirt road  
Then turn right and go SE 0.5 mi. on an old dirt airstrip  
Then bear left and go E 0.8 mi. on an old well road to a P&A well  
Then turn left and go NNW  $\approx$ 900' on a very old seismic line  
Then turn right and go NE  $\approx$ 600' on an old bladed road to a wash  
Then bear right and follow the S side of the wash E  $\approx$ 1,000'  
Then cross the wash and go NE  $\approx$ 600' to an old bladed road  
Then bear left and go N  $\approx$ 200' on the old bladed road  
Then turn right at the top and go E  $\approx$ 800' to the pad

Route from P&A well to the new well is marked with orange or pink flags.  
Roads will be maintained to a standard at least equal to their present condition. An encroachment permit has been filed with the county road department.

### 2. ROAD TO BE BUILT OR UPGRADED (See PAGE 15)

Call BLM (435-587-2141) 48 hours before starting construction. Prior to hauling wide loads, Legacy will call the Utah Dept. of Transportation at (435) 587-2620 so warning signs can be placed as needed on U-211.

Existing roads will be flat bladed only where needed to fix ruts. Cattleguards will be installed on the county road if requested by BLM or the grazing permittee. The new road will be flat bladed with a 16' wide running

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surface and maximum disturbed width of 20' (except for 50' at the culvert). Topsoil will be windrowed by the side. Maximum cut or fill will be 3'. Maximum grade will be 9%. A  $\geq 36"$  x  $\geq 40'$  culvert will be installed in the north wash. The south approach to the culvert will be lower than the north to allow high flows to pass spillway-like around the culvert instead of washing it out. No cattleguard or turnout is needed.

Surface disturbance and vehicle travel will be limited to the pad and road. Any additional area needed must be approved in advance by BLM.

If the well is a producer, access east of County Road 122 will be upgraded to Class 3 Road Standards within 60 days of dismantling the rig. If the deadline cannot be met, the Resource Area will be notified so temporary drainage control can be installed. Class 3 Road Standards control drainage by using topography, ditch turnouts, dips, out sloping, crowning, low water crossings, and culverts. A locking steel gate will be installed in the road cut on the north side of the P&A well. Gate will be posted with an "Authorized Personnel Only" sign.

### 3. EXISTING WELLS

There are no oil, gas, injection, or water wells within a mile.

### 4. PROPOSED PRODUCTION FACILITIES

A tank battery, separator, and/or heater-treater will be installed on the pad.

All permanent (on site for 6 or more months) surface facilities will be painted a flat, neutral Largo red color. Parts required to comply with OSHA colors will be excluded.

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The tank battery will be surrounded by a dike of sufficient capacity to contain 150% of the storage capacity of the largest tank in the battery + one day's production. All loading lines will be placed inside the dike.

Site security regulations in 43 CFR 3162.7-5 and Onshore Order #3 will be obeyed. Oil and gas measurement will comply with Onshore Orders #4 (43 CFR 3162.7-2) and #5 (43 CFR 3162.7-3).

#### 5. WATER SUPPLY

Water will be trucked from Indian Creek on state land (36-29.5s-20e). A temporary use permit will be filed with the state for water use.

#### 6. CONSTRUCTION MATERIALS

Pad construction materials will be on lease native soil in place on the well pad and road. Bentonite will be bought from a commercial source. Rock will be bought from a private pit or from BLM *per* 43 CFR 3610.

#### 7. WASTE DISPOSAL

The reserve pit will be lined with at least 24 tons of commercial bentonite worked into 3:1 sides. At least half of the capacity will be in cut. No liquid hydrocarbons will be discharged to the pit, pad, or road. Should hydrocarbons escape, they will be cleaned up and removed within 48 hours.

The pit will be fenced 48" high on 3 sides with 32" high woven wire topped with 2 smooth wire stands 4" and 16" above the woven wire. Steel posts will be set  $\leq 16.5'$  apart. Corner posts will be  $\geq 6"$  OD wood and anchored with a deadman. The 4th side will be fenced the same when drilling stops. The

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fence will be kept in good repair while the pit dries.

All trash will be placed in a trash cage. When full and upon the finish of completion operations it will be hauled to a county landfill. There will be no trash burning or burial on location.

Human waste will be disposed of in chemical toilets. Toilet contents will be disposed of at a state approved dump station.

Water will be produced into the reserve pit for 90 days or less after initial production. During the 90 days, an application will be submitted for BLM's approval of a permanent disposal method and site.

#### 8. ANCILLARY FACILITIES

There will be no airstrip or formal camp. Camper trailers may be on site for the company man, mud logger, tool pusher, etc.

#### 9. WELL SITE LAYOUT & CONSTRUCTION

See PAGES 17-18 for depictions of the well pad, cross sections, cut and fill diagrams, reserve pit, burn pit, access road onto the pad, parking, living facilities, and rig orientation. The top 6" (where available) of soil will be stockpiled south of the pad. A diversion ditch will be built north of the pad.

#### 10. RECLAMATION

Upon completion of drilling, the well site will be cleared of all debris, material, and junk not needed for production.

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Reclamation will start when the reserve pit is dry. All areas not needed for production will be backfilled, recontoured to natural contours, and reserved topsoil spread. If the well is a producer, then enough topsoil will be saved to reclaim the rest of the pad. The topsoil pile and all reclaimed areas will be broadcast seeded between October 1 and February 28 with the following mix. Sown areas will be left rough and lightly harrowed (4" deep) after seeding.

2 lb/ac fourwing saltbush	2 lb/ac Indian ricegrass
1 lb/ac shadscale	2 lb/ac galleta grass
1 lb/ac scarlet globemallow	1 lb/ac sand dropseed
1 lb/ac Mormon tea	

Once the well is plugged, then the road will be reclaimed from the well back to the Hurrah Pass Road. The culvert will be removed. If the road is surfaced, then surfacing material will be removed before seeding. Water bars will be installed in cut and skewed to drain. Road cuts and fills will be reduced to a natural appearance and the road blocked at the Hurrah Pass Road junction.

#### 11. SURFACE OWNER

All construction or upgrading is on state or BLM. This APD is also serving as a BLM right-of-way application for the non-unit, non-county road portion of the BLM access (S2SW4 25-28s-20e).

*\* Well pad Federal surf. per operator. Jc*

#### 12. OTHER INFORMATION

The dirt contractor will be have an approved copy of the surface use plan.

Legacy will inform everyone in the area who is associated with the well that they are subject to prosecution for knowingly disturbing historic or archaeological sites or for collecting artifacts. If historic or archaeological

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material is uncovered during construction, the operator is to immediately stop work that may further disturb such material and call BLM. BLM will inform the operator within 5 working days whether the material appears eligible for the Nat'l. Register of Historic Places, likely mitigation the operator must do before the site can be used if in-situ preservation is not necessary, and a time frame for BLM to complete an expedited review under 36 CFR 800.11 to confirm through the SHPO that the BLM's findings are correct and the mitigation is appropriate.

If the operator wishes at any time to relocate activities to avoid the expense or delays of mitigation, BLM will assume responsibility for any required recording or stabilization of the exposed material. Otherwise, the operator is responsible for mitigation costs. BLM will provide technical and procedural mitigation guidelines. Once BLM verifies mitigation has been completed, the operator will then be allowed to resume construction.

BLM's Moab District Office's phone number is (435) 259-6111. BLM Petroleum Engineer Eric Jones can be called after hours at 259-2214.

BLM's San Juan Resource Area's phone number is (435) 587-2141.

Safe drilling and operating practices will be used. The nearest hospital is over a 2 hour drive away in Monticello. It is 3 blocks northwest of the intersection of US 666 and US 191. Hospital phone number is (435) 587-2116. Or dial 1-800-332-1911 from anywhere in San Juan County, Ut.

### 13. REPRESENTATION AND CERTIFICATIONS

Anyone having questions concerning the APD should contact:

Brian Wood  
Permits West, Inc.

Legacy Energy Corporation  
Lockhart Federal #2  
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37 Verano Loop, Santa Fe, NM 87505  
(505) 466-8120 FAX: (505) 466-9682

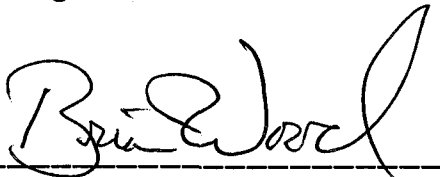
Mobile: (505) 699-2276

Field representative is Dennis Gustafson, phone number (303) 405-8440.

Be advised that Legacy Energy Corporation is considered to be the operator of the Lockhart Federal #2 well in the SESE 30-28s-21e, Lease UTU-65347, San Juan County, Utah, and is responsible under the terms and conditions of the lease for the operations conducted on the leased lands. Bond coverage for this well will be provided via surety consent as provided for in 43 CFR 3104.2. BLM will hold the aforementioned operator and bond liable until the provisions of 43 CFR 3106.7-2 continuing responsibility are met.

*\* Federal Bond No. 159261566 per operator. Lc*

I hereby certify Legacy Energy Corporation has the necessary consents from the proper lease and unit interest owners to conduct lease and unit operations in conjunction with this APD. Bond coverage *per* 43 CFR 3104 for lease activities will be provided by Legacy Energy Corporation. I hereby certify I have inspected the proposed drill site and access route; that I am familiar with the conditions which currently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and that the work associated with operations proposed herein will be performed by Legacy Energy Corporation and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.



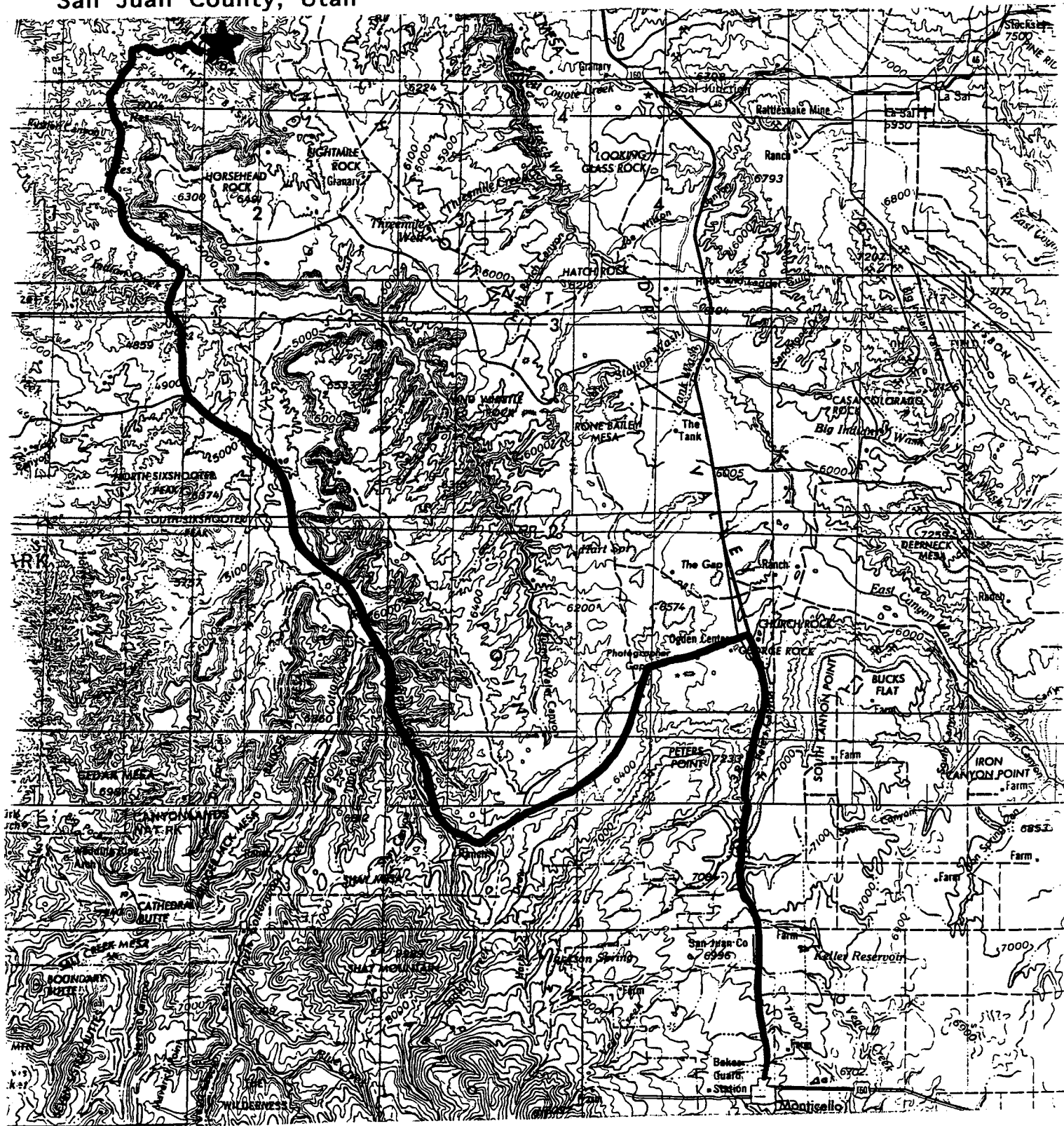
Brian Wood, Consultant

August 20, 1998



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PROPOSED WELL: ★

ACCESS ROUTE: ~

**PERMITS WEST** INC.  
PROVIDING PERMITS for LAND USERS

**PAGE 16**

ROAD TO BE UPGRADED: 

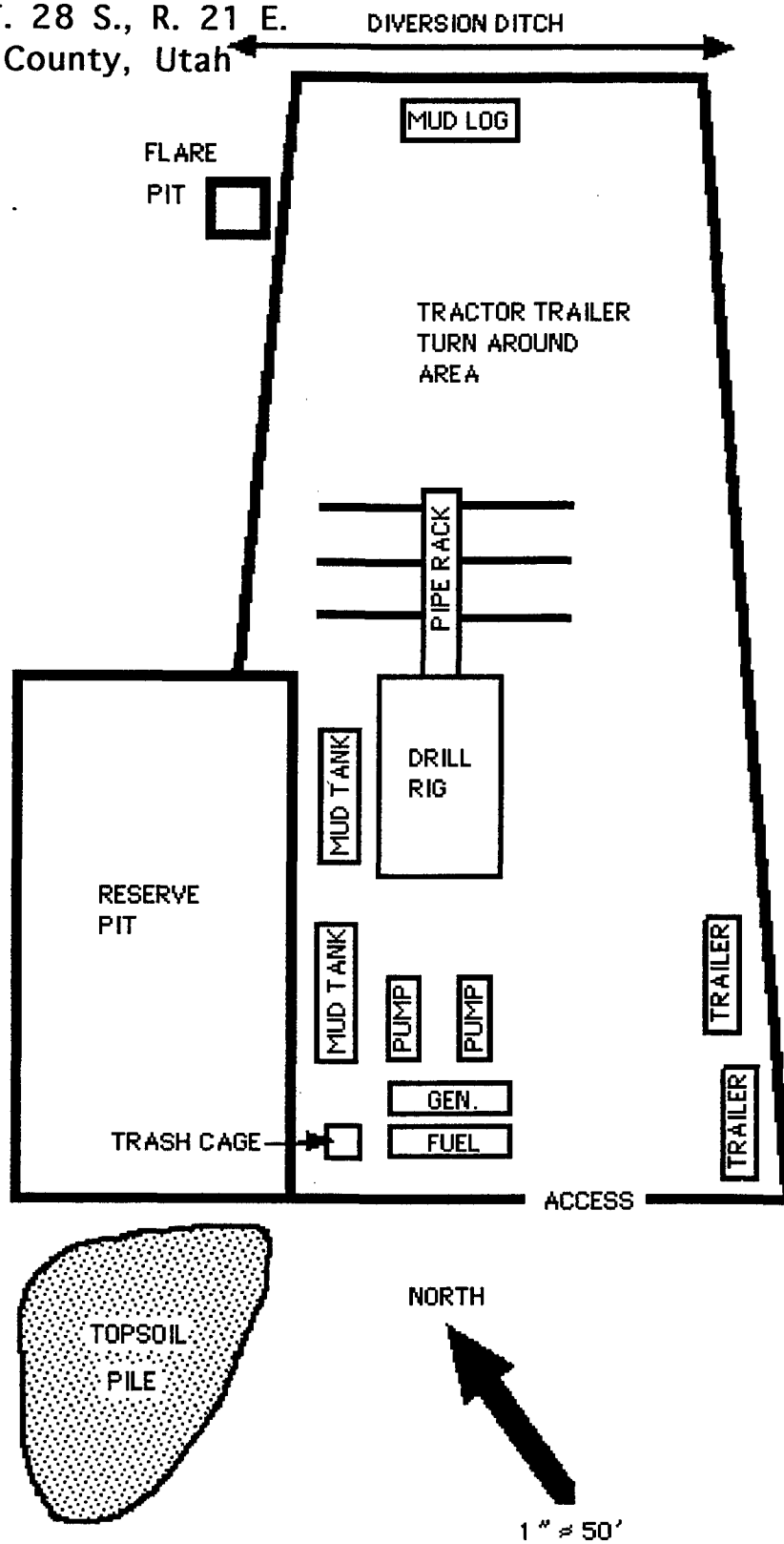
SAN JUAN COUNTY ROAD 122: 



**PERMITS WEST, INC.**  
PROVIDING PERMITS for LAND USERS

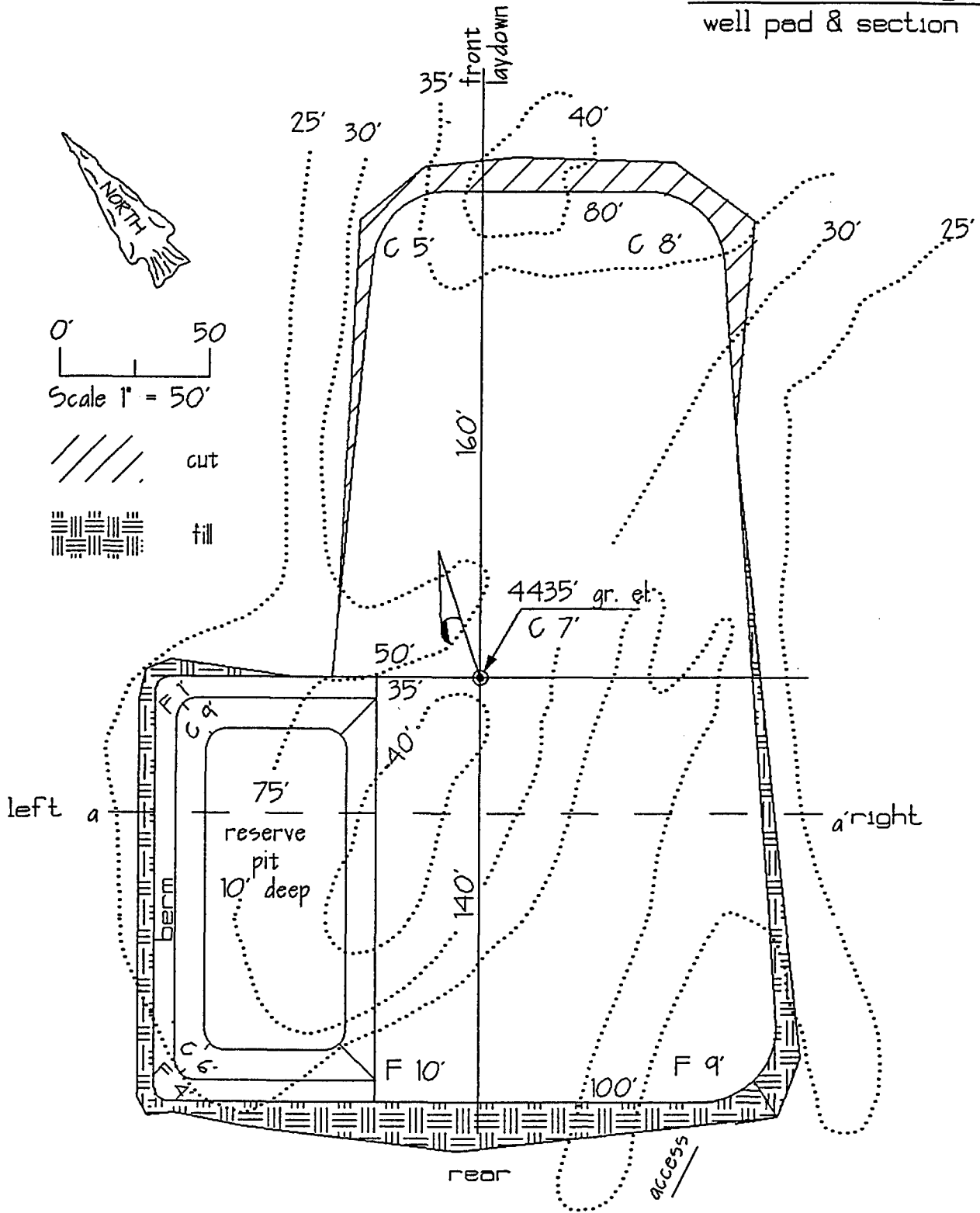
Legacy Energy Corporation  
Lockhart Federal #2  
320' FSL & 1040' FEL  
Sec. 30, T. 28 S., R. 21 E.  
San Juan County, Utah

PAGE 17



N 39° E

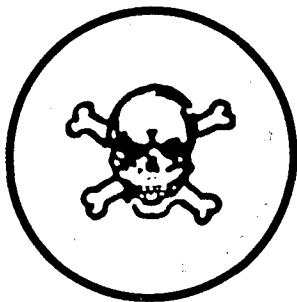
Lockhart Federal # 2  
well pad & section



a

Cross section

a'



Date: August 20, 1998

## **H2S CONTINGENCY PLAN**

Company Name: Legacy Energy

Address: 1675 Broadway, Suite 1140  
Denver, CO 80202

P.O. Box 480272  
Denver, CO 80248-0272

Well Name: Lockhart Federal #2

T.D.: 4135

Location: 320 FSL & 1040 FEL 30-28s-21e, San Juan Cty, Utah. (Two miles east of Cty Rd 122)

Field Name: Lockhart Basin

Surface Formation: Moenkopi

### **OPERATIONS SUPERINTENDENT:**

Name: Beth McBride

Office Tele: 303-405-8440

Home Tele: 303-233-8314

### **RIG CONTRACTOR:**

Name: Unknown at this time

Rig Number:

Rig Tele:

### **COMPANY MAN:**

Name: Unknown at this time

Office Tele:

Home Tele:

### **DRILLING SUPERINTENDENT:**

Name: Unknown at this time

Office Tele:

Home Tele:

### **GEOLOGIST:**

Name: Bret Gunneson

Office Tele: 303-405-8440

Home Tele:

### **TOOL PUSHERS:**

Name: Unknown at this time

Home Tele:

Name:

Home Tele:

I. **INTRODUCTION** H<sub>2</sub>S is a toxic, poisonous gas that could cause death or injury. The objective of this contingency plan is to provide an organized plan of action for alerting and protecting the public from H<sub>2</sub>S exposure in the event a potentially hazardous volume is accidentally released to the atmosphere. This plan should be activated immediately if any such release occurs. The Drilling Superintendent is responsible for initiating and carrying out the plan.

II. **INDIVIDUAL RESPONSIBILITIES** It is the responsibility of all personnel on the location to familiarize themselves with the procedures outlined in this contingency plan.

A. All Personnel:

1. Responsible for his assigned safety equipment.
2. Responsible for familiarizing himself with the location of all safety equipment.
3. Responsible for reporting any indications of H<sub>2</sub>S to those in the area and to a supervisor.

B. Drilling Superintendent:

1. Responsible for thoroughly understanding and seeing that all aspects of this contingency plan are enforced.
2. Responsible for implementing all phases of this contingency plan.
3. Responsible for keeping a minimum of personnel on the locating during expected hazardous operations.
4. Responsible for coordinating all well site operations and communications in the event that an emergency condition develops.
5. Responsible for ensuring that all visitors receive an H<sub>2</sub>S Safety Orientation. A visitors log will be maintained as well as a list of all personnel on the location after drilling has progressed to the suspected H<sub>2</sub>S formation.

III. **LOCATION LAYOUT**

A. The location of a least two pre-determined safe areas to assemble at in the event of an emergency. These locations should be located 180 degrees to one another, and in the direction of the prevailing winds.

B. H<sub>2</sub>S rig monitor with three (3) heads. One located at the bell nipple, one located at the shale shaker, and a third one on the rig floor. Indicate here any other additional H<sub>2</sub>S detector locations for this well:

Type:

Location:

Type:

Location:

C. The location and type of all air masks. Self-contained breathing apparatus for use by rig personnel for this well will be kept in the following location(s):

Type: 1 – 30 Min. Rescue Unit	Location: Company Man's Trailer
Type: 1 – 30 Min. Rescue Unit	Location: Tools Pusher's Trailer
Type: 2 – 30 Min. Rescue Units	Location: Briefing Area #1
Type: 2 – 30 Min. Rescue Units	Location: Briefing Area #2
Type: 5 – 5 Min. Escape Units	Location: Rig Floor

If a cascade system is utilized, indicate the location(s):

Type:	Location:
Type:	Location:

D. The location of windsocks or streamers. The wind direction indicators for this well will be located at:

Type: Windsock	Location: Briefing Area #1
Type: Windsock	Location: Briefing Area #2
Type: Windsock	Location: Pits
Type: Windsock	Location: Rig Floor

E. The location of any other safety equipment used, such as flare guns or bug blowers:

Type: Hand Held Detector & Tubes	Location: Rig Floor
Type:	Location:

F. The location of all telephones and/or means of communication are as follows:

Type: Unknown at this time	Location:
Type:	Location:

G. Warning Signs:

1. "NO SMOKING" signs should be strategically located around the rig and rig location. The following locations are appropriate:

- a. Doghouse
- b. Rig Floor
- c. Substructure
- d. Lower landing of all stairs leading to rig floor
- e. Mud pits
- f. Shale shaker

2. "POISON GAS" signs should also be strategically located round the rig and rig location. The following locations are appropriate:

- a. All entrances leading to the location
- b. Lower landing of all stairs leading to rig floor
- c. All areas around substructure, including mud pits and shale shaker
- d. Various points along the perimeter of the radius of exposure.

**NOTE:** All warning signs should be black and yellow in color and of readable size at a reasonable distance.

**IV. OPERATING PROCEDURES** The following operating procedures will be utilized for drilling in areas with H<sub>2</sub>S.

- A. Plan of operating for handling gas kicks and other drilling problems. Any gas kick will be controlled by using approved well control techniques. Upon evidence that ambient H<sub>2</sub>S concentrations have reached 10 PPM, all non-essential personnel will be evacuated to pre-determined safe areas. Personnel remaining on the rig floor will continue to control the well until the situation indicates the area is safe to re-enter.
- B. Special Operations
  - 1. Drill Stem Tests. All drill stem tests must be closed chamber and conducted during daylight hours.
  - 2. Coring. After a core has been cut, circulate bottoms up and monitor for h<sub>2</sub>s. If hole conditions (and/or detectors) indicate potentially hazardous conditions, put breathing equipment on 10 stands before core barrel reaches the surface. Breathing equipment will be worn by all personnel while core barrel is pulled, broken out and opened up, and until a safe atmosphere is indicated.

**V. OPERATING CONDITIONS** Operating conditions are defined in three categories. A description of each of these conditions and the required action to take are given below.

**A. CONDITION I - Normal Operating Conditions, Potential Danger, Operations Under Control**

Characterized by: Normal drilling operations and test operations in zones which contain or may contain H<sub>2</sub>S.

Warning Flag: Yellow

Alarm: None

Probable Occurrence: No detectable gas present at surface.

General Action:

- (1) Know location of safety equipment.
- (2) Check safety equipment for proper function. Keep it available.
- (3) Be alert for a condition change.
- (4) Follow instructions of supervisor.



**B. CONDITION II - Potential to Moderate Danger to Life**

Characterized by: H<sub>2</sub>S gas present. Concentration less than 10 PPM.

Warning Flag: Orange

Alarm: Flashing light at 10 PPM H<sub>2</sub>S.  
Intermittent blasts on horn at 10 PPM H<sub>2</sub>S.

Probable Occurrence: (1) As drill gas.  
(2) As trip gas when circulating bottoms up.  
(3) When a core barrel is pulled.  
(4) When a well kick is circulated out.  
(5) Surface pressure, well flow or lost operations.  
(6) Equipment failure during testing operations.

General Action: (1) Follow instructions of supervisor.  
(2) Put on breathing equipment if directed, or if conditions warrant it.  
(3) Stay in "SAFE BRIEFING AREA" if instructed and not working to correct the problem.  
(4) The Drilling Superintendent will initiate action to reduce the H<sub>2</sub>S concentration to zero.

**C. CONDITION III - Moderate to Extreme Danger to Life**

Characterized by: H<sub>2</sub>S present in concentrations at or above 10 PPM. Critical well operations or well control problems. In the extreme, loss of well control.

Warning Flag: Red

Alarm: Flashing light and continuous blast on horn at 10 PPM H<sub>2</sub>S.

Probable occurrence: (1) As drill gas.  
(2) As trip gas when circulating bottoms up.  
(3) When a core barrel is pulled.

- (4) When a well kick is circulated out.
- (5) Surface pressure, well flow or lost returns problems.
- (6) Equipment failure during testing operations.

**General Action:**

- (1) Put on breathing equipment. Move to "SAFE BRIEFING AREA" and remain there is not working to correct or control problem.
- (2) Follow instructions of Drilling Superintendent or other supervisor.
- (3) The Drilling Superintendent will initiate emergency action as provided in the contingency plan and as appropriate to the actual conditions. If testing operations are in progress the well will be shut in.
- (4) The Drilling Superintendent will conduct any necessary operations with an absolute minimum of personnel. All persons in the immediate area will wear a breathing apparatus. All other personnel will restrict their movements to those directed by the Superintendent.
- (5) If gas containing hydrogen sulfide is ignited, the burning hydrogen sulfide will be converted to sulfur dioxide which is poisonous.

**VI. EMERGENCY PROCEDURES** The procedures listed below apply to drilling and testing operations.

- A. If at any time during Condition I, the mud logger, mud engineer, or any other person detects H<sub>2</sub>S, he will notify the Drilling Superintendent. All personnel should keep alert to the Drilling Superintendent's orders. He will:
  1. Immediately begin to ascertain the cause or the source of the H<sub>2</sub>S and take steps to reduce the H<sub>2</sub>S concentration to zero. This should include having the mud engineer run a sulfide and pH determination on the flowline mud if water-base mud is in use. If an oil-base mud is in use, the mud engineer should check the lime content of the mud.
  2. Order non-essential personnel out of the potential danger area.
  3. Order all personnel to check their safety equipment to see that it is working properly and in the proper location. Persons without breathing equipment will not be allowed to work in a hazard area.
  4. Notify the Contract Supervisor of condition and action taken.
  5. Increase gas monitoring activities with portable H<sub>2</sub>S detectors and continue operations with caution.
  6. Display the orange warning flag.

B. If the H<sub>2</sub>S concentration exceed 10 PPM the following steps will be taken:

1. Put on breathing equipment.
2. Display red flag
3. Driller - prepare to shut the well in.
  - a. Pick up pipe to get kelly out of BOP's.
  - b. Close BOP's if necessary.
4. If testing operations are in progress, the well will be shut-in.
5. Help anyone who may be affected by gas.
6. Evacuate quickly to the "SAFE BRIEFING AREA" if instructed or conditions warrant.

C. In the event a potentially hazardous volume of H<sub>2</sub>S is released into the atmosphere, the following steps must be taken to alert the public:

1. Remove all rig personnel from the danger area and assemble at a pre-determined safe area, preferable upwind from the well site.
2. Alert the drilling office, public safety personnel, regulatory agencies, and the general public of the existence and location of an H<sub>2</sub>S release. See List of Emergency Telephone Numbers.
3. Assign personnel to block any public road (and access road to location) at the boundary of the area of exposure. Any unauthorized people within the area should be informed that an emergency exists and be ordered to leave immediately.
4. Request assistance from public safety personnel to control traffic and/or evacuate people from the threatened area.

VII. **TRAINING PROGRAM** All personnel associated with the drilling operations will receive training to insure efficient and correct action in all situation. This training will be in the general areas of: (1) personnel safety, (2) rig operations, and (3) well control procedures.

A. **Personnel Safety Training** - All personnel shall have received H<sub>2</sub>S training in the following areas:

1. Hazards and characteristics of H<sub>2</sub>S.
2. Effect on metal components of the system.
3. Safety precautions.
4. Operation of safety equipment and life support systems.
5. Corrective action and shutdown procedures

B. **Rig Operations** - All rig personnel shall have received training in the following areas.

1. Well control procedures.
2. Layout and operations of the well control equipment.

NOTE: Proficiency will be developed through BOP drills which will be documented by the Drilling Superintendent

- C. **Service Company Personnel** All service personnel shall have been trained by their employers in the hazards and characteristics of H<sub>2</sub>S and the operation of safety equipment and life support systems.
- D. **Visitors** All first time visitors to the location will be required to attend a safety orientation. The Drilling Superintendent shall be responsible for this orientation and he shall see that every visitor is logged in correctly.
- E. **Public** The public within the area of exposure shall be given an advance briefing by the Drilling Superintendent. This briefing must include the following elements:
1. Hazards and characteristics of hydrogen sulfide. It is an extremely dangerous gas. It is normally detectable by its "rotten egg" odor, but odor is not a reliable means of detection because the sense of smell may be dulled or lost due to intake of the gas. It is colorless, transparent, and flammable. It is heavier than air and may accumulate in low places.
  2. The necessity of an emergency action plan. Due to the danger of persons exposed to hydrogen sulfide and the need for expeditious action should an emergency occur, this action plan will be put into effect if and when a leak occurs.
  3. The location of hydrogen sulfide within the area of exposure. At the drilling location.
  4. The manner in which the public will be notified of an emergency. By telephone or personal contact.
  5. Steps to be taken in case of an emergency.
    - a. Abandon danger area.
    - b. Notify necessary agencies and request assistance for controlling traffic and evacuating people.

## EMERGENCY PHONE NUMBER LIST

### MEDICAL PERSONNEL:

1. Ambulance(s): 911 or (800) 332-1911
2. Hospital(s): (435) 587-2116
3. Doctor(s):

### FIREFIGHTING AND PUBLIC SAFETY PERSONNEL:

1. Fire Department(s): 911 or (435) 587-2500
2. Police Department(s): 911 or (435) 587-2237
3. County Sheriff: 911 or (435) 587-2237
4. State Police: 911 or (435) 587-2237

### GOVERNMENT AGENCIES:

1. County Health Department:
- 2.
- 3.

### RIG PERSONNEL:

- |                               |                                     |                |
|-------------------------------|-------------------------------------|----------------|
| 1. Operations Superintendent: | Name: Unknown at this time<br>Tele: |                |
| 2. Company Man:               | Name: Unknown at this time<br>Tele: |                |
| 3. Drilling Superintendent:   | Name: Unknown at this time<br>Tele: |                |
| 4. Tool Pusher(s):            | Name: Unknown at this time<br>Tele: | Name:<br>Tele: |

**SERVICE COMPANIES:**

1. Pump Trucks: Unknown at this time
2. Dirt Contractor(s): Unknown at this time
3. Roustabout Crew(s): Unknown at this time
4. H2S Service Company: Standby Safety Services, Inc.
5. Others:

Note: All entries should be made in the following manner:

“Name, Tele, Location”

WORKSHEET  
APPLICATION FOR PERMIT TO DRILL

APD RECEIVED: 08/31/98

API NO. ASSIGNED: 43-037-31792

WELL NAME: LOCKHART FED #2  
OPERATOR: LEGACY ENERGY CORPORATION (N6945)  
CONTACT: Brian Wood (505) 466-8120

PROPOSED LOCATION:  
SESE 30 - T28S - R21E  
SURFACE: 0320-FSL-1040-FEL  
BOTTOM: 0320-FSL-1040-FEL  
SAN JUAN COUNTY  
WILDCAT FIELD (001)

LEASE TYPE: FED  
LEASE NUMBER: UTU-65347  
SURFACE OWNER: Federal

PROPOSED FORMATION: LDLL

INSPECT LOCATION BY: / /

TECH REVIEW	Initials	Date
Engineering		
Geology		
Surface		

RECEIVED AND/OR REVIEWED:

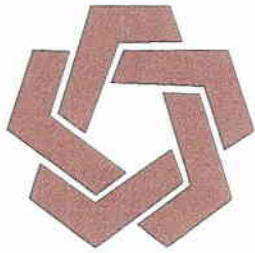
☒ Plat  
☒ Bond: Federal ☒ State ☐ Fee ☐  
(No. \_\_\_\_\_)  
☒ Potash (Y/N)  
☒ Oil Shale (Y/N) \*190-5(B)  
☒ Water Permit  
(No. Indian Creek)  
☒ RDCC Review (Y/N)  
(Date: \_\_\_\_\_)  
N/A St/Fee Surf Agreement (Y/N)

LOCATION AND SITING:

☒ R649-2-3. Unit Lockhart Canyon  
☐ R649-3-2. General  
☐ R649-3-3. Exception  
☐ Drilling Unit  
Board Cause No: \_\_\_\_\_  
Date: \_\_\_\_\_

COMMENTS: \*Not listed 1998 Unit P.O.D. (B.Lm added 9-11-98)

STIPULATIONS: ① FEDERAL APPROVAL



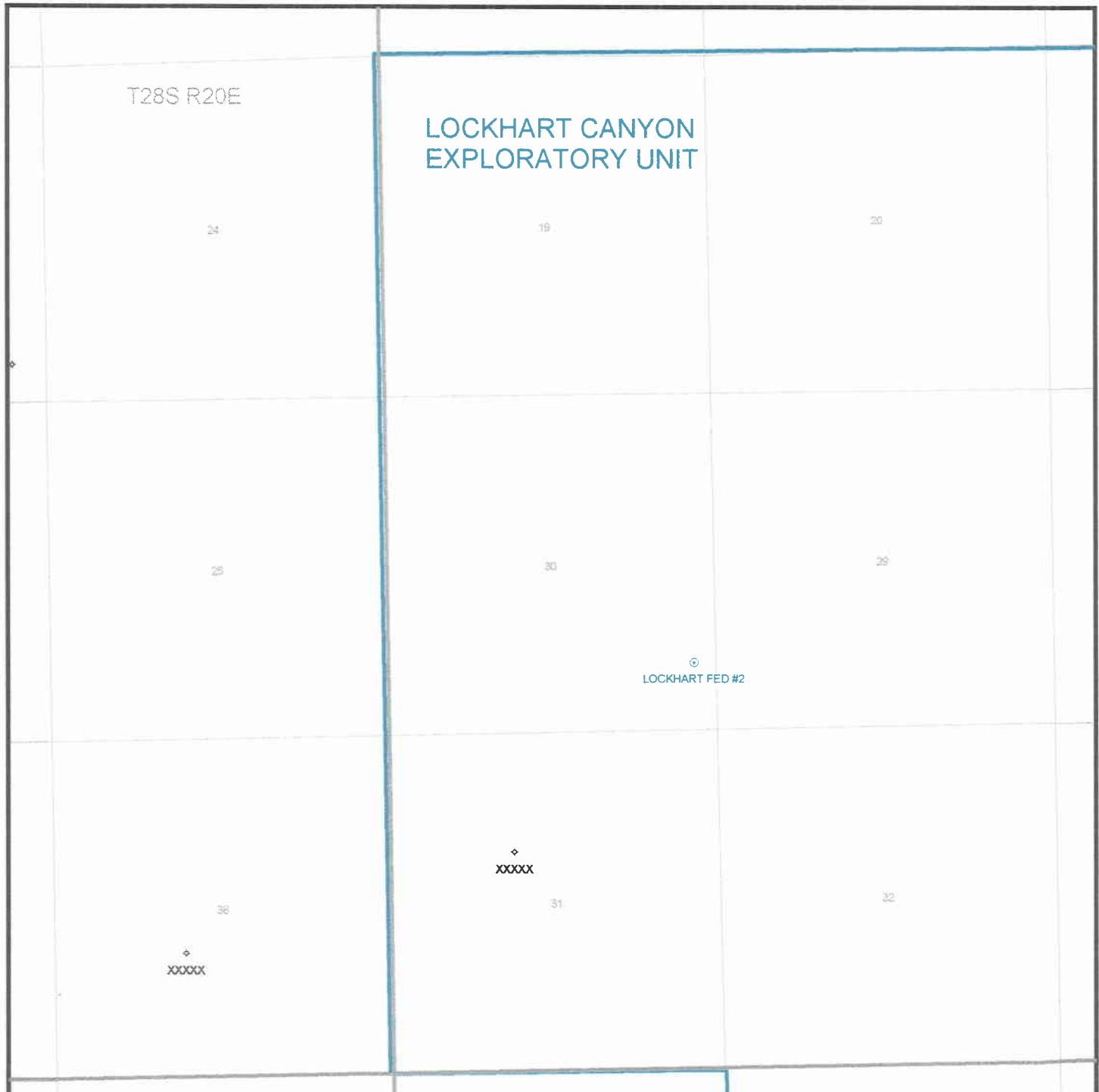
DIVISION OF OIL, GAS & MINING

OPERATOR: LEGACY ENERGY CORP. (N6945)

FIELD: WILDCAT (001)

SEC. 30, TWP 28S, RNG 21E

COUNTY: SAN JUAN UNIT: LOCKHART CANYON UNIT



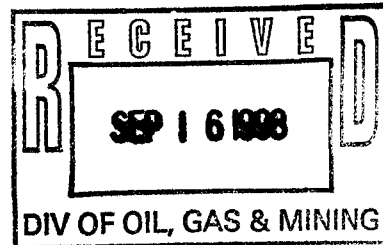
DATE PREPARED:  
11-SEP-1998



United States Department of the Interior

BUREAU OF LAND MANAGEMENT  
Utah State Office  
P.O. Box 45155  
Salt Lake City, Utah 84145-0155

IN REPLY REFER TO:  
3160  
(UT-922)



Memorandum

To: Assistant District Manager Minerals, Moab District  
From: Michael Coulthard, Petroleum Engineer  
Subject: 1998 Plan of Development Lockhart Canyon Unit  
San Juan County, Utah.

Pursuant to email between Lisha Cordova, Division of Oil, Gas and Mining, and Mickey Coulthard, Utah State Office, Bureau of Land Management. The following well(s) is/are planned for calendar year 1998 within the Lockhart Canyon Unit, San Juan County, Utah.

API #	WELL NAME	LOCATION
43-037-31792	LOCKHART FED #2	0320-FSL 1040-FEL 30 28S 21E

This office has no objection to permitting the well(s) at this time.

/s/ Michael L. Coulthard

bcc: File - Lockhart Canyon Unit  
Division of Oil Gas and Mining  
Agr. Sec. Chron  
Fluid Chron

MCoulthard:mc:--



State of Utah  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

1594 West North Temple, Suite 1210

PO Box 145801

Salt Lake City, Utah 84114-5801

801-538-5340

801-359-3940 (Fax)

801-538-7223 (TDD)

Michael O. Leavitt  
Governor

Lowell P. Braxton  
Division Director

September 17, 1998

Legacy Energy Corporation  
P.O. Box 480272  
Denver, Colorado 80248-0272

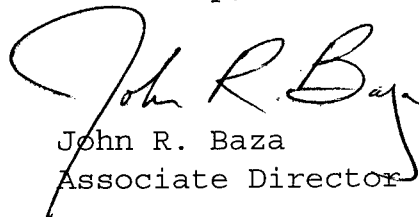
Re: Lockhart Fed. #2 Well, 320' FSL, 1040' FEL, SE SE, Sec. 30,  
T. 28 S., R. 21 E., San Juan, Utah

Gentlemen:

Pursuant to the provisions and requirements of Utah Code Ann. 40-6-1 et seq., Utah Administrative Code R649-3-1 et seq., and the attached Conditions of Approval, approval to drill the referenced well is granted.

This approval shall expire one year from the above date unless substantial and continuous operation is underway, or a request for extension is made prior to the expiration date. The API identification number assigned to this well is 43-037-31792.

Sincerely,



John R. Baza  
Associate Director

lwp

Enclosures

cc: San Juan County Assessor  
Bureau of Land Management, Moab District Office

Operator: Legacy Energy Corporation  
Well Name & Number: Lockhart Fed. #2  
API Number: 43-037-31792  
Lease: UTU-65347  
Location: SE SE Sec. 30 T. 28 S. R. 21 E.

### Conditions of Approval

1. General

Compliance with the requirements of Utah Admin. R. 649-1 et seq., the Oil and Gas Conservation General Rules, and the applicable terms and provisions of the approved Application for Permit to Drill.

2. Notification Requirements

Notify the Division within 24 hours prior to spudding the well. Contact Jim Thompson at (801) 538-5336.

Notify the Division prior to commencing operations to plug and abandon the well. Contact Dan Jarvis at (801) 538-5338 or Robert Krueger at (801) 538-5274.

3. Reporting Requirements

All required reports, forms and submittals shall be promptly filed with the Division, including but not limited to the Entity Action Form (Form 6), Report of Water Encountered During Drilling (Form 7), Weekly Progress Reports for drilling and completion operations, and Sundry Notices and Reports on Wells requesting approval of change of plans or other operational actions.

4. State approval of this well does not supersede the required federal approval which must be obtained prior to drilling.

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

## APPLICATION FOR PERMIT TO DRILL OR DEEPEN

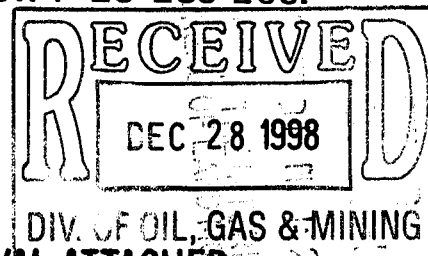
1a. TYPE OF WORK <b>DRILL</b> <input checked="" type="checkbox"/> <b>DEEPEN</b> <input type="checkbox"/>		5. LEASE DESIGNATION AND SERIAL NO. <b>UTU-65347</b>	
b. TYPE OF WELL OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input type="checkbox"/>		6. IF INDIAN, ALLOTTEE OR TRIBE NAME <b>N/A</b>	
2. NAME OF OPERATOR <b>Legacy Energy Corporation (303) 405-8440</b>		7. UNIT AGREEMENT NAME <b>Lockhart Canyon</b>	
3. ADDRESS AND TELEPHONE NO. <b>P. O. Box 480272, Denver, Co. 80248-0272</b>		8. FARM OR LEASE NAME, WELL NO. <b>Lockhart Fed. #2</b>	
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)* At surface <b>320' FSL &amp; 1040' FEL</b>  At proposed prod. zone <b>Same</b>		9. API WELL NO.	
14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE* <b>33 air miles NNW of Monticello, Ut.</b>		10. FIELD AND POOL, OR WILDCAT <b>Wildcat</b>	
15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any) <b>4,086'*</b>		11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA <b>30-28s-21e SLBM</b>	
16. NO. OF ACRES IN LEASE <b>1,240.84</b>		12. COUNTY OR PARISH <b>San Juan</b>	
17. NO. OF ACRES ASSIGNED TO THIS WELL <b>40</b>		13. STATE <b>Ut.</b>	
18. DISTANCE FROM PROPOSED* LOCATION TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT. <b>12,294'*</b>		19. PROPOSED DEPTH <b>Rotary</b>	
20. ROTARY OR CABLE TOOLS <b>Rotary</b>		21. APPROX. DATE WORK WILL START* <b>Jan. 1, 1999</b>	
21. ELEVATIONS (Show whether DF, RT, GR, etc.)		22. APPROX. DATE WORK WILL START*	

## 23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	GRADE SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
17-1/2"	13-3/8"	Conductor	120'	≈100 cu ft & to surface
12-1/4"	9-5/8" (N-80)	40#	1,000'	≈570 cu ft & to surface
7-7/8"	5-1/2" (J-55)	15.5#	4,135'	≈1,370 cu ft & to surface

\*Distances shown to unit boundary and unit well.

APD is also doubling as a BLM road right-of-way application for ≈900' x 20' (0.41 ac.) of existing road (see page 16) in S2SW4 25-28s-20e.

FLARING OR VENTING OF  
GAS IS SUBJECT TO NTL 4-A  
DMS 1/1/80

CONDITIONS OF APPROVAL ATTACHED

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24. SIGNED [Signature] CONSULTANT (505) 466-8120 DATE **8-20-98**

(This space for Federal or State office use)

PERMIT NO. 43-037-31792

APPROVAL DATE

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

CONDITIONS OF APPROVAL, IF ANY:

APPROVED BY 151 Daryl Trotter

TITLE

DATE

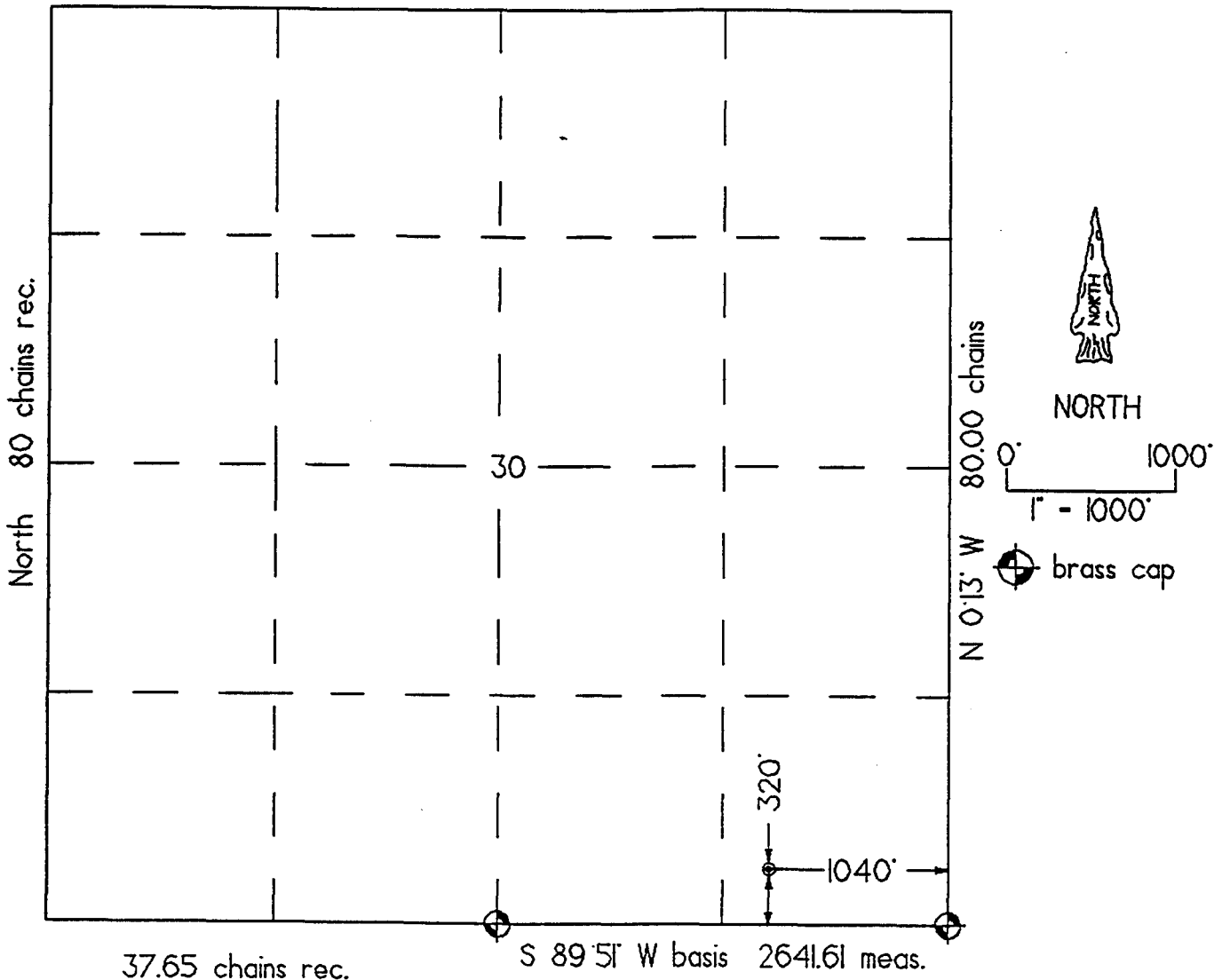
DEC 21 1999

\*See Instructions On Reverse Side

It is a crime for any person knowingly and willfully to make to any department or agency of the

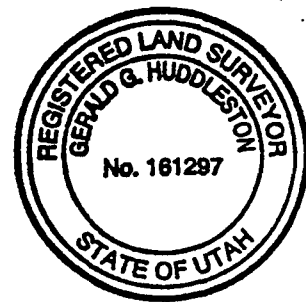
Well Location Plat

S 89°52' W 77.10 chains rec.



Well Location Description

LEGACY ENERGY CORPORATION  
Lockhart Federal # 2  
320' FSL & 1040' FEL  
Section 30, T.28 S., R.21 E., SLM  
San Juan County, UT  
4435' grd. el. (from GPS)



20 July 1998

Gerald G. Huddleston  
Gerald G. Huddleston, LS

The above is true and correct to my knowledge and belief.

HUDDLESTON LAND SURVEYING - BOX KK - CORTEZ, CO - (970) 565 -3330

LEGACY ENERGY CORPORATION  
Lockhart Federal #2  
Lease UTU65347  
SESE Section 30, T. 28 S., R. 21 E.  
San Juan County, Utah

CONDITIONS OF APPROVAL

Approval of this application does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Be advised that Legacy Energy Corporation is considered to be the operator of the above well and is responsible under the terms and conditions of the lease for the operations conducted on the leased lands.

Bond coverage for this well is provided by UT1105 (Principal - Legacy Energy Corporation) via surety consent as provided for in 43 CFR § 3104.2.

This office will hold the aforementioned operator and bond liable until the provisions of 43 CFR § 3106.7-2 continuing responsibility are met.

This permit will be valid for a period of one year from the date of approval. After permit termination, a new application must be filed for approval.

All lease operations will be conducted in full compliance with applicable regulations (43 CFR § 3100), Onshore Oil and Gas Orders, lease terms, notices to lessees, and the approved plan of operations. The operator is fully responsible for the actions of his subcontractors. A copy of these conditions and the approved plan will be made available to field representatives to insure compliance.

A. DRILLING PROGRAM

1. The BOPE system shall be rated to 3M as proposed. Installation, testing and operation of the system shall be in conformance with Onshore Oil and Gas Order No.
2. Any deviation must have prior written approval.

2. Any fluid bearing zone or lost circulation zones encountered while drilling will be isolated behind appropriate casing and cement.

3. If a gas meter run is constructed, it will be located on lease within 500 feet of the wellhead. The gas flowline will be buried from the wellhead to the meter and will be buried downstream of the meter until it leaves the pad. Meter runs will be housed and/or fenced. The gas meter shall be calibrated prior to first sales and shall be calibrated quarterly thereafter. All gas production and measurement shall comply with the provisions of 43 CFR 3162.7-3, Onshore Oil and Gas Order No. 5, and American Gas Association (AGA) Report No. 3.

4. Any air drilling must be conducted in accordance with Onshore Order No. 2. Section E, Special Drilling Operations, rig must have spark arresters, blooie line, float valve, automatic igniters, etc.

B. SURFACE USE PLAN

The following COAs have been developed to mitigate adverse environmental impacts which may result from the action permitted by the accompanying decision. The action permitted and its anticipated impacts are fully described in the text above and the reference EA.

1. All initial site preparation and well drilling operations shall be prohibited from April 1 through July 15 and October 15 through December 31, to avoid desert bighorn sheep lambing and rutting periods .
2. If site preparation or drilling operations are scheduled between February 1 and April 1 then the operator shall give the BLM five working days prior notice so a raptor survey can be performed. If active golden eagle or other raptor nests are found within one-half mile, or peregrine falcons within one mile of the drill location then operations shall be suspended until nestlings have fledged.
3. Prior to transporting drilling and production equipment which require wide loads, the operator will consult and coordinate with the Utah Department of Transportation at (435) 587-2620, so that warning signs can be placed at appropriate locations along State Highway 211.
4. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the operator, or any person working on his behalf, on public or Federal land shall be immediately reported to the Monticello Field Office Manager. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Monticello Field Office Area Manager. An evaluation of the discovery will be made by the Monticello Field Office Manager to determine appropriate action to prevent the loss of significant cultural or scientific values. The operator will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the authorized officer after consulting with the operator.
5. Reclamation of the entire disturbed area will be accomplished by grading the area to approximately its natural contour, applying top soil and re-establishing vegetation on the site.



Topsoil shall be spread evenly over the area. A seed bed shall be prepared by scarifying the soil surface to a depth of 4 inches. The operator shall use a harrow, disc or similar implement with tools spaced no greater than six inches apart. Seeds shall be lightly covered if broadcast methods are used. Seeding will be done between October 1 and February 28. The seeds shall be certified weed free. The following prescription of pure live seed shall be applied:

Galleta	2 pounds/acre	Indian ricegrass	2 pounds/acre
Fourwing saltbush	2 pounds/acre	Scarlet Globemallow	1 pound/acre
Shadscale	1 pound/acre	Sand dropseed	1 pound/acre
Green Ephedra	1 pound/acre		

#### COAs specific to APD

6. Prior to installation of production equipment and facilities, the operator shall notify the BLM to schedule a pre-work conference. The BLM will determine, at that time, reasonable measures necessary to mitigate the visual impacts to the maximum extent practical. These measures shall include, but are not limited to: use of natural topography to screen facilities, orientation of specific production equipment, flare pit design and construction, artificial screens, etc.

7. All production facilities shall be painted Federal Standard Color #30324 (brown) or its equivalent.

8. The operator shall install a metal gate across the access road at the point designated by the BLM. The gate shall be positioned in the road to effectively block vehicular access. The gate shall be kept locked at all times.

9. The reserve pit fence will be kept in good repair and maintained in a tight condition. The reserve pit fence will be constructed as follows:

- 32" high woven wire fence, with 2 smooth wire stands set 4" and 16" above the woven wire. Total fence height will be 48".
- posts will be set no farther apart than 16.5'
- corners will consist of posts that are at least 6" in diameter (h-brace construction will not be required due to the short distance between corners and temporary nature of the fence. All corners will be stabilized with a "deadman".
- steel t-posts will be placed between corner posts
- wire stays will be installed between T-posts
- there will be a 10 wide distance between the top lip of the reserve pit and reserve pit fence.
- poultry wire shall be installed to the fence wire and anchored down to prevent small animal entry

10. Netting material shall be installed over the top and around the sides of the reserve pit. The netting material shall be one inch mesh or less and maintain in a tight condition and good repair.

### C. REQUIRED APPROVALS, REPORTS AND NOTIFICATIONS

Required verbal notifications are summarized in Table 1, enclosed.

Building Location- Contact the BLM Petroleum Engineering Technician at the Monticello Field Office at least 48 hours prior to commencing construction of location.

Spud- The spud date will be reported to BLM 24 hours prior to spudding. Written notification in the form of a Sundry Notice (Form 3160-5) will be submitted to the Moab Field Office within 24 hours after spudding, regardless of whether spud was made with a dry hole digger or big rig.

Daily Drilling Reports- Daily drilling reports shall detail the progress and status of the well and shall be submitted to the Moab Field Office on a weekly basis.

Monthly Reports of Operations- In accordance with Onshore Oil and Gas Order No. 1, this well shall be reported on Minerals Management Service (MMS) Form 3160, "Monthly Report of Operations," starting the month in which operations commence and continuing each month until the well is physically plugged and abandoned. This report will be filed directly with MMS.

Sundry Notices- There will be no deviation from the proposed drilling and/or workover program without prior approval. "Sundry Notices and Reports on Wells" (Form 3160-5) will be filed for approval for all changes of plans and other operations in accordance with 43 CFR § 3162.3-2. Safe drilling and operating practices must be observed.

Drilling Suspensions- Operations authorized by this permit shall not be suspended for more than 30 days without prior approval of the Moab Field Office. All conditions of this approval shall be applicable during any operations conducted with a replacement rig.

Undesirable Events- Spills, blowouts, fires, leaks, accidents, or any other unusual occurrences shall be immediately reported to the BLM in accordance with requirements of NTL-3A.

Cultural Resources- If cultural resources are discovered during construction, work that might disturb the resources is to stop, and the BLM is to be notified.

First Production- Should the well be successfully completed for production, the Moab Field Office will be notified when the well is placed in producing status. Such notification may be made by phone, but must be followed by a sundry notice or letter not later than five (5) business days following the date on which the well is placed into production.

A first production conference will be scheduled as soon as the productivity of the well is apparent. This conference should be coordinated through the Monticello Field Office. The Monticello Field Office shall be notified prior to the first sale.

Well Completion Report- Whether the well is completed as a dry hole or as a producer, "Well Completion and Recompletion Report and Log" (Form 3160-4) will be submitted to the Moab Field Office not later than thirty (30) days after completion of the well or after completion of operations being performed, in accordance with 43 CFR § 3162.4-1. Two copies of all logs, core descriptions, core analyses, well test data, geologic summaries, sample description, and all other surveys or data obtained and compiled during the drilling, workover, and/or completion operations, will be filed with Form 3160-4. When requested, samples (cuttings and/or samples) will be submitted to the Moab Field Office.

Venting/Flaring of Gas- Gas produced from this well may not be vented/flared beyond an initial, authorized test period of 30 days or 50 MMcf, whichever occurs first, without the prior, written approval of the BLM. Should gas be vented or flared without approval beyond the authorized test period, the well may be ordered shut-in until the gas can be captured or approval to continue the venting/flaring as uneconomic is granted. In such case, compensation to the lessor shall be required for that portion of the gas that is vented/flared without approval and which is determined to have been avoidably lost.

Produced Water- Produced waste water may be confined to an unlined pit for a period not to exceed 90 days after initial production. During the 90 day period, an application for approval of a permanent disposal method and location, along with the required water analysis, will be submitted to the Moab Field Office for approval pursuant to Onshore Oil and Gas Order No. 7.

Off-Lease Measurement, Storage, Commingling- Prior approval must be obtained from the Moab Field Office for off-lease measurement, off-lease storage and/or commingling (either down-hole or at the surface).

Plugging and Abandonment- If the well is completed as a dry hole, plugging instructions must be obtained from the Moab Field Office prior to initiating plugging operations.

A "Subsequent Report of Abandonment" (Form 3160-5) shall be filed with the Moab Field Office within thirty (30) days following completion of the well for abandonment. This report will indicate where plugs were placed and the current status of surface restoration. Upon completion of approved plugging, a regulation marker will be erected in accordance with 43 CFR § 3162.6. Final abandonment will not be approved until the surface reclamation work required by the approved APD or approved abandonment notice has been completed to the satisfaction of the BLM, or the appropriate surface managing agency.

## TABLE 1. NOTIFICATIONS

Notify Jeff Brown of the Monticello BLM Field Office in Monticello, Utah, at (435) 587-1525, or at home (435) 587-2046 for the following:

2 days prior to commencement of dirt work, construction and reclamation;

1 day prior to spudding;

50 feet prior to reaching each casing setting depth;

3 hours prior to testing BOPE

If the person at the above number cannot be reached, notify the Moab Field Office at (435) 259-2100. If unsuccessful, contact one of the people listed below.

Well abandonment operations require 24 hour advance notice and prior approval. In the case of newly drilled dry holes, verbal approval can be obtained by calling the Moab Field Office at (435) 259-2100. If approval is needed after work hours, you may contact the following:

Gary Torres, Petroleum Engineer	Office:	(435) 587-1524
	Home:	(435) 587-2705

Eric Jones, Petroleum Engineer	Office:	(435) 259-2117
	Home:	(435) 259-2214



## United States Department of the Interior

### BUREAU OF LAND MANAGEMENT

Moab Field Office  
82 East Dogwood  
Moab, Utah 84532

3160  
(U-75058)  
(U-65347)  
(UT-062)

DEC 23 1999

Ms. Beth McBride  
Legacy Energy Corporation  
P.O. Box 480272  
Denver, Colorado 80248-0272

Re: APD Extensions  
Lockhart Federal No. 1  
U-75058  
Section 5 T28S, R21E  
San Juan County, Utah

Lockhart Federal No. 2  
U-65347  
Section 30 T28S, R21E  
San Juan County, Utah

Dear Ms. McBride:

We have received your request for extension of the above referenced applications for permit to drill (APDs), and find it to be in order. Your APDs for the Lockhart Federal No. 1 and Lockhart Federal No. 2 are extended through December 16, 2000 and December 21, 2000 respectively.

Should you have any questions, please call Eric Jones at (435) 259-2117.

Sincerely,

A handwritten signature in black ink, appearing to read "William H. Thompson", is located below the "Sincerely," text.

Assistant Field Manager  
Division of Resources

cc: Monticello Field Office, (UT-090)

# Legacy Energy Corporation

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October 13, 2000

Ms. Lisha Cordova  
Department of Natural Resources  
Division of Oil, Gas and Mining  
P.O. Box 145801  
Salt Lake City, UT 84114-5801

**RE: Lockhart Federal #1 Well**  
Sec. 5, T29S, R21E, San Juan County, UT  
API 43-037-31788

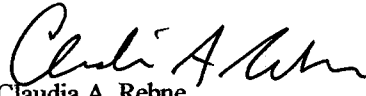
**Lockhart Federal #2 Well**  
Sec 30, T28S, R21E, San Juan County, UT  
API 43-037-31792

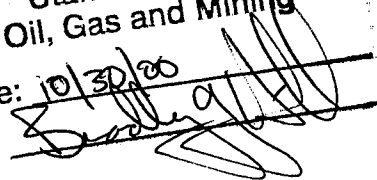
Dear Ms. Cordova,

Legacy Energy Corporation respectfully requests a one-year extension of the approval to drill the above-referenced wells. It is Legacy's intention to drill these wells as soon as possible, however, we are currently waiting for the BLM to resolve issues regarding open Federal acreage within the Lockhart Canyon Federal Unit.

We appreciate that you brought this matter to our attention, and we appreciate your patient consideration regarding these wells.

Sincerely,

  
Claudia A. Rebne  
Vice President

Approved by the  
Utah Division of  
Oil, Gas and Mining  
Date: 10/30/00  
By: 

RECEIVED

OCT 16 2000

DIVISION OF  
OIL, GAS AND MINING

# Legacy Energy Corporation

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October 26, 2000

Ms. Lisha Cordova  
Department of Natural Resources  
Division of Oil, Gas and Mining  
P.O. Box 145801  
Salt Lake City, UT 84114-5801

**RE: Lockhart Federal #1 Well**  
Sec. 5, T29S, R21E, San Juan County, UT  
API 43-037-31788

**Lockhart Federal #2 Well**  
Sec 30, T28S, R21E, San Juan County, UT  
API 43-037-31792

Dear Ms. Cordova,

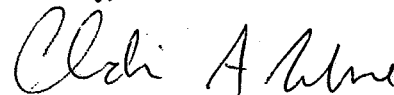
Legacy Energy Corporation respectfully requests an exception to the Utah State Spacing Rule for the above-referenced wells. It is my understanding that this exception is granted if the lease ownership does not change within 460' of the proposed well location. Similarly, it is my understanding that if the lease ownership does differ within 460' of the proposed well, so long as all adjacent lease owners have committed to the Lockhart Canyon Federal Unit, the exception is granted.

With respect to the Lockhart Federal #1, at a distance of 460' in any direction from the proposed well, we are still within the same lease (Lease UTU-75058).

With respect to the Lockhart Federal #2, at a distance of 460' to the south we encounter a different lease. The proposed well is located on UTU-65347, and 460' to the south (NENE 31-28S-21E) lies within UTU-63182. The ownership in both areas is the same. Furthermore, all owners have committed to the Federal Unit.

Given this information, Legacy requests an exception to the Utah State Spacing Rule for both wells. If you have any questions or desire more information, please contact me at (970) 325-0038.

Sincerely,

  
Claudia A. Rebne  
Vice President

Approved by the  
Utah Division of  
Oil, Gas and Mining  
Date: 10/30/00  
By: 

RECEIVED

OCT 30 2000

DIVISION OF  
OIL, GAS AND MINING



# Legacy Energy Corporation

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November 29, 2001

Ms. Lisha Cordova  
Department of Natural Resources  
Division of Oil, Gas and Mining  
P.O. Box 145801  
Salt Lake City, UT 84114-5801

**RE: Lockhart Federal #1 Well**  
Sec. 5, T29S, R21E, San Juan County, UT  
API 43-037-31788


**Lockhart Federal #2 Well**  
Sec 30, T28S, R21E, San Juan County, UT  
API 43-037-31792

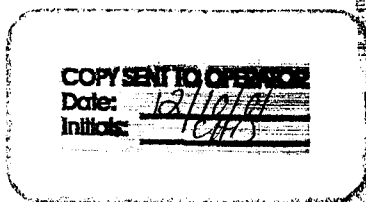
Dear Ms. Cordova,

Legacy Energy Corporation respectfully requests a one-year extension of the approval to drill the above-referenced wells. It is Legacy's intention to drill these wells as soon as possible, however, we are still waiting for the BLM to resolve issues regarding open Federal acreage within the Lockhart Canyon Federal Unit.

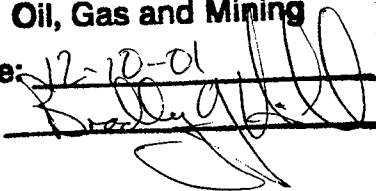
We appreciate that you brought this matter to our attention, and we appreciate your patient consideration regarding these wells.

Sincerely,

  
Claudia A. Rebne  
Vice President



Approved by the  
Utah Division of  
Oil, Gas and Mining

Date: 12-10-01  
By: 

**RECEIVED**

DEC 03 2001

**DIVISION OF  
OIL, GAS AND MINING**

Route original/copy to:

☐ Suspense

☐ Other

(Return Date) \_\_\_\_\_

(To-Initials) \_\_\_\_\_

1. Date of Phone Call: 12/10/01 Time: 9:00

2. DOGM Employee (name) LCORDOVA ( ☒ Initiated Call)  
Talked to:  
Name MARIE MCGANN ( ☐ Initiated Call) - Phone No. (435 ) 259-2135  
of (Company/Organization) BLM/MOAB

3. Topic of Conversation: EXTEND APD'S AN ADDITIONAL YEAR?

4. Highlights of Conversation: \_\_\_\_\_  
UNRESOLVED LEASE ISSUE'S - OK TO EXTEND AN ADDITIONAL YEAR.  
\_\_\_\_\_  
\_\_\_\_\_  
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\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



# United States Department of the Interior

## BUREAU OF LAND MANAGEMENT

Moab Field Office  
82 East Dogwood  
Moab, Utah 84532

3160  
(U-75058)  
(U-65347)  
(UT-062)

Beth McBride  
Legacy Energy Corporation  
P.O. Box 480272  
Denver, Colorado 80248-0272

DEC 12

Re: Extension of Applications for Permit to Drill (APDs)  
Lockhart Federal No. 1      Lockhart Federal No. 2  
U-75058      U-65347  
Section 5 T29S, R21E      Section 30 T28S, R21E  
San Juan County, Utah      San Juan County, Utah  
43-037-31788      43-037-31792

Dear Ms. McBride:

In response to your request of November 28<sup>th</sup>, the valid term of each of the above referenced APDs is extended for one year. The Lockhart Federal No. 1 approval is effective through December 16, 2002; and the Lockhart Federal No. 2 is effective through December 21, 2002.

All other conditions of the original approvals remain in effect. Should you have any questions, please call Eric Jones of this office at 435-259-2117.

Sincerely,  
/s/ William Stringer

Assistant Field Manager  
Division of Resources

cc: UT-090, Monticello Field Office  
State of Utah, DOGM

bc: UT-062, EJones

EJones:mm:12/11/01.apd.ext.lockhart1.2

**RECEIVED**  
DEC 17 2001  
DIVISION OF  
OIL, GAS AND MINING

# Legacy Energy Corporation

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January 10, 2003

Ms. Diana Mason  
Department of Natural Resources  
Division of Oil, Gas and Mining  
P.O. Box 145801  
Salt Lake City, UT 84114-5801

**RE: Lockhart Federal #1 Well**  
Sec. 5, T29S, R21E, San Juan County, UT  
API 43-037-31788

**Lockhart Federal #2 Well**  
Sec 30, T28S, R21E, San Juan County, UT  
API 43-037-31792

Dear Ms. Mason

Legacy Energy Corporation respectfully requests a one-year extension of the approval to drill the above-referenced wells. It is Legacy's intention to drill these wells. We have some leases that will expire within the next year and we are working diligently with partner's to attempt to get these wells drilled in 2003.

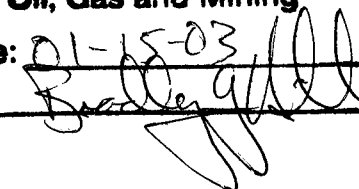
We appreciate that you brought this matter to our attention, and we appreciate your patient consideration regarding these wells.

Sincerely,



Claudia A. Rebne  
Vice President

**Approved by the  
Utah Division of  
Oil, Gas and Mining**

**Date:** 01-15-03  
**By:** 

**COPY SENT TO OPERATOR**  
**Date:** 01-16-03  
**Initials:** CHD

**RECEIVED**

**JAN 13 2003**

**DIV. OF OIL, GAS & MINING**



State of Utah

Department of  
Natural Resources

Division of  
Oil, Gas & Mining

ROBERT L. MORGAN  
*Executive Director*

LOWELL P. BRAXTON  
*Division Director*

MICHAEL O. LEAVITT  
*Governor*

OLENE S. WALKER  
*Lieutenant Governor*

January 23, 2004

Beth McBride  
Legacy Energy Corporation  
P O Box 12289  
Denver CO 80212

Re: APD Rescinded – Lockhart Fed #2 Sec. 30, T. 28S, R. 21E  
San Juan County, Utah API No. 43-037-31792


Dear Ms. McBride:

The Application for Permit to Drill (APD) for the subject well was approved by the Division of Oil, Gas and Mining (Division) on September 17, 1998. On October 30, 2000, December 10, 2001 and on January 15, 2003 the Division granted a one-year APD extension. On January 23, 2004, you requested that the division rescind the state approved APD. No drilling activity at this location has been reported to the division. Therefore, approval to drill the well is hereby rescinded, effective January 23, 2004.

A new APD must be filed with this office for approval prior to the commencement of any future work on the subject location.

If any previously unreported operations have been performed on this well location, it is imperative that you notify the Division immediately.

Sincerely,

  
Diana Whitney  
Engineering Technician

cc: Well File  
Bureau of Land Management, Moab